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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,998	04/02/2004	Ho Joong Kang	2080-3247	1989

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EXAMINER

MAHONEY, CHRISTOPHER E

ART UNIT PAPER NUMBER

2851

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/816,998	Applicant(s) KANG, HO JOONG	
	Examiner Christopher E. Mahoney	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh (U.S. Pat. No. 6,497,485) in view of Bradley (U.S. Pat. No. 6,191,893) and Arnold et al. (SID 01 DIGEST). Itoh teaches reflective illuminating optical system, comprising: Polarized Beam Splitters 200 for transmitting the R, G, and B lights, respectively; first, second, and third panels 300 for changing a phase of respective lights transmitted through the first, second, and third PBSs, and reflecting the phase changed lights; and an X-prism 420 for receiving the R, G, and B lights that are reflected twice by the first, second, and third panels first, followed by the first, second, and third PBSs, and combining the R, G, and B lights and permitting the combined lights to incident on a projection lens 500. Polarizer plate 180 is between the x-prism and the PBS. The applicant is directed to review figure 11. All three color paths are projected but the red is separated from the blue and green before the green is separated from the blue (i.e. the red is transmitted while the blue and green are reflected by the first dichroic mirror 512). Bradley teaches from col. 3, line 50 through col. 4, line 13 that the separation may be performed in any

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order (i.e. separated blue from red and green first (col. 3, line 55) instead of separating red from blue and green first (col. 3, line 60)). It would have been obvious to one of ordinary skill in the art at the time the invention was made to separate the blue from the red and green as taught by Bradley for the purpose of positional convenience. Itoh does not teach the use of LCoS or wire grid PBS. Arnold et al. teaches that it was known to utilize LCOS panels for smaller pixels at faster rates and to utilize wire grid PBSs for greater angle tolerance and reduced chromatic aberration. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the features taught by Arnold et al. for the purpose of reduced costs.

Response to Arguments

Applicant's arguments filed December 27, 2005 have been fully considered but they are not persuasive. The applicant argues that the claimed invention recites transmitting blue while reflecting red and green while Itoh teaches a red light reflecting mirror 511 for separating the red light. Itoh does teach a red light reflecting mirror 511 for separating the red light. This same mirror transmits the blue and green lights. It is Bradley that is used to teach that the separation of lights could be done in *any other order*, including separate B from R and G. This would result in Itoh having a first dichroic mirror, 512', which would reflect red and green while transmitting blue and another dichroic mirror, 511', which reflected blue while transmitting red and green. A second dichroic mirror 520'(513') would then separate the red from the green.

The applicant argues that the X prism requires two prisms to separate the red from the green and blue. That Itoh has additional structure (the additional mirror in the X mirror) is

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irrelevant. It still has a first dichroic mirror 512 which transmits one color and reflects the other two.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. For example, Kato (U.S. Pat. No. 6,980,260) teaches that it was known to provide a dichroic mirror for transmitting blue and reflecting green and red. Kato also teaches as an alternative that red may be transmitted while blue and green are reflected.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher E. Mahoney whose telephone number is (571) 272-2122. The examiner can normally be reached on 8:30AM-5PM, Monday-Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Chris Mahoney', with a large, stylized '8' at the end.

Christopher E Mahoney
Primary Examiner
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